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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/073,848

02/11/2002

Jorg-Achim Fischer

HK-643

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08/03/2006

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EXAMINER

PHAM, HAI CHI

ART UNIT

PAPER NUMBER

2861

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/073,848

Applicant(s)

FISCHER ET AL.

Examiner

Hai C. Pham

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/13/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-22 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6, 8, 13-15, 17, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jürgensen (U.S. 6,888,853) in view of Minakuchi et al. (U.S. 6,011,250).

Jürgensen discloses a multi-beam scanning device for processing material on a processing surface of a printing form, the device comprising a plurality of fiber exits for providing laser beams (optic fibers 28 respectively connected to the fiber lasers 5, the optical fibers having fiber exits at the terminators 26) (col. 16, lines 49-60), said fiber exits having first alignment devices (housing 132), a mount (housing 132) having a plurality of holders for in each case a respective one of said fiber exits, said mount having second alignment devices complementary to said first alignment devices (Fig. 6), a beam control device (multi-channel acousto-optical modulator 34) configured to perform [at least one operation selected from the group consisting of interrupting the laser beams emerging from said fiber exits,] deflecting the laser beams emerging from said fiber exits and modulating an intensity of the laser beams emerging from said fiber

exits in order to provide a multi-spot array with image points on the photosensitive material (Figs. 33, 36a).

Jürgensen fails to teach the fiber exits having a respective desired position and having a substantially identical angular alignment in relation to the respective desired position when said first alignment devices of all of said fiber exits and said second alignment devices of said mount are one of aligned and mutually engaged.

Minakuchi et al. discloses a multi-beam scanning device comprising a plurality of fiber exits (321-328, Fig. 10) for providing laser beams, a mount (alignment block 330) having a plurality of holders (grooves 337) for in each case a respective one of said fiber exits, said mount having second alignment devices (pressing plate 339) complementary to said first alignment devices (alignment portion 333) (Fig. 11), the exit ends of the fibers having a respective desired position and having a substantially identical angular alignment in relation to the respective desired position when said first alignment devices and said second alignment devices are mutually engaged (Fig. 13).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the device of Jürgensen with a mount as taught by Minakuchi et al. The motivation for doing so would have been to allow the exit ends of the fibers to be proper aligned so as to obtain the desired print resolution.

With regard to claims 2-3, Jürgensen further teaches the recording material being any of the various well-known recording materials including printing plates and photosensitive recording material (col. 12, line 54 through col. 13, line 8 and col. 53, lines 18-40).

Jürgensen also teaches:

- said beam control device includes correction devices (e.g., AOM 34) for displacing individual ones of the image points of the multi-spot array, said correction devices deflect the laser beams electronically in a direction perpendicular to an axis extending through the desired position of given ones of the image points (the laser beams being deflected by the AOM device 34 perpendicular to the array direction of the laser beams) (Fig. 35) (col. 47, line 65 through col. 48, line 40),
- said beam control device includes a plurality of acousto-optical modulators (e.g., multi-channel acousto-optical modulator 34) disposed between said fiber exits and the photosensitive material (Fig. 36a),
- focusing the laser beams on the rotating drum by forming a converging fan of beams (Fig. 36a).

3. Claims 5, 7, 16, 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jürgensen in view of Minakuchi et al., as applied to claims 1, 6, 14, 19 above, and further in view of Gross (U.S. 5,309,178).

Jürgensen, as modified by Minakuchi et al., discloses all the basic limitations of the claimed invention except for the correction devices electronically delay a respective time of incidence of the laser beams on the photosensitive material for displacing individual ones of the image points of the multi-spot array on the photosensitive material

in a given direction parallel to a direction of a relative movement between said fiber exits and the photosensitive material.

Gross discloses a laser writing apparatus comprising a multi-channel acoustic modulator (20), wherein a delay generator circuitry (62) is provided to each channel for correcting the spatial distortion of the laser writing apparatus, the delay generator inserting appropriate relative delays between the various channels so as to image the recording medium with straight pixel arrangement (col. 5, lines 43-59) (Figs. 1B-1B, 5A-5C).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the delay generator into the device of Jürgensen as taught by Gross. The motivation for doing so would have been to correct for the dislocation of the image dots on the surface of the recording material.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jürgensen in view of Minakuchi et al., as applied to claim 1 above, and further in view of Figov et al. (WO 97/27065).

Jürgensen, as modified by Minakuchi et al., discloses all the basic limitations of the claimed invention except for the optical system for imaging said fiber exits telecentrically onto the photosensitive material.

Figov et al. discloses a printing system including a plurality of optical fibers coupled laser diodes whose beams are imaged by a telecentric lens assembly (35) onto the surface of the printing material (25) at the desired positions and sizes (see abstract).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide a telecentric lens assembly to the device of Jürgensen as taught by Figov et al. The motivation for doing so would have been to be able to obtain dots at précised positions and with desired sizes independent of the distance between the exit end of the optical fibers and the printing plate.

5. Claims 10, 12, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jürgensen in view of Minakuchi et al., as applied to claims 1, 14 above, and further in view of Hirabayashi et al. (U.S. 6,595,697).

Jürgensen, as modified by Minakuchi et al., discloses all the basic limitations of the claimed invention except for the first alignment devices of said fiber exits each including a radially projecting element, and the first and second alignment devices including respective markings, and the angular alignment adjustment device.

Hirabayashi et al. discloses an optical fiber coupling device including a ferrule for supporting an end of the optical fiber, a holder (30) having a flange on its outer periphery, a collar member (40) having positioning groove or mark relative to the holder for adjusting the angle of rotation of the optical fiber about its axis (col. 12, lines 20-31).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Jürgensen with the aforementioned teaching of Hirabayashi et al. The motivation for doing so would have been to align the angle of the plane polarization of the optical fiber.

Allowable Subject Matter

6. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to claims 1-10 and 12-22 have been considered but are moot in view of the new grounds of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vip Patel can be reached on (571) 272-2458. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2861

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HAI PHAM
PRIMARY EXAMINER
July 29, 2006